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104TH CONGRESS
1ST SESSION

H. R. 655

To authorize the hydrogen research, development, and demonstration programs of the Department of Energy, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 24, 1995

Mr. WALKER introduced the following bill; which was referred to the Committee on Science

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A BILL

To authorize the hydrogen research, development, and demonstration programs of the Department of Energy, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Hydrogen Future Act of 1995''.

SEC. 2. FINDINGS.

The Congress finds that—

(1) fossil fuels, the main energy source of the present, have provided this country with tremendous

supply but are limited and polluting, and their production and utilization technologies are mature;

(2) the basic scientific fundamentals are needed for private sector investment and development of new and better energy sources and enabling technologies;

(3) hydrogen holds tremendous promise as a new and better energy source because it secures a practically infinite supply from water and combusts purely to water;

(4) hydrogen production efficiency is a major technical barrier to society collectively benefitting from one of the great energy sources of the future;

(5) an aggressive, results-oriented, multiyear research initiative on efficient hydrogen fuel production and use should continue; and

(6) the current Federal effort to develop hydrogen as a fuel is inadequate.

SEC. 3. PURPOSES.

The purposes of this Act are—

(1) to provide for the research and development of the basic scientific fundamentals, and the demonstration of the processes and technologies, needed to produce, store, transport, and utilize hydrogen for

transportation, industrial, residential, and utility applications; and

(2) to foster industry participation during each stage of the Department of Energy hydrogen research, development, and demonstration program to ensure that technology transfer to the private sector occurs to develop viable, marketable products.

SEC. 4. DEFINITIONS.

For purposes of this Act—

(1) the term ''demonstration'' means a demonstration to determine technical feasibility;

(2) the term ''Department'' means the Department of Energy; and

(3) the term ''Secretary'' means the Secretary of Energy.

SEC. 5. RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

(a) PROGRAM GOAL.—The goal of the program described in this section is the demonstration of the technical feasibility of efficiently utilizing hydrogen for transportation, industrial, residential and utility applications by the year 2000.

(b) PRODUCTION.—The Secretary shall support hydrogen energy production research and development in the following areas, leading to at least 2 technical demonstrations in each such area:

(1) Chemical conversion, including photoproduction.

(2) Bioconversion.

(3) Electrolysis.

(c) STORAGE.—The Secretary shall support research and development of safe and economical storage of hydrogen, both for onboard vehicle and stationary use. Such research and development should be aimed at improving existing methods and developing new approaches in each of the following areas, leading to at least 1 technical demonstration in each such area:

(1) Hydrides and porous materials.

(2) Liquefaction and cryogenics.

(3) Compressed gas.

(4) Advanced methods, such as microspheres and new materials.

(d) TRANSPORTATION.—The Secretary shall support research and development of efficient, hydrogen-based transportation vehicles of the following types, leading to at least 1 technical demonstration of each such type:

(1) An economically feasible, low emission motor vehicle using hydrogen, in pure form or mixed with other fuels, as a combustible power supply.

(2) An economically feasible, zero emission motor vehicle using hydrogen.

(e) OTHER USES.—The Secretary shall support hydrogen energy research and development for each of the following uses, leading to at least 1 technical demonstration in each such area:

(1) Electricity generation using hydrogen as a fuel source for utility and industrial applications.

(2) Heating and cooling using hydrogen.

(3) Hydrogen fuel jet engine.

(f) SCHEDULE.—Within 180 days after the date of enactment of this Act, the Secretary shall solicit proposals for carrying out the research and development activities authorized under this section. Awards of financial assistance shall be made within 1 year after such date of enactment.

(g) COST SHARING.—(1) Except as otherwise provided in section 6, for research and development programs carried out under this Act, the Secretary shall require a commitment from non-Federal sources of at least 20 percent of the cost of the project. The Secretary may reduce or eliminate the non-Federal requirement under this paragraph if the Secretary determines that the research and development is of a basic or fundamental nature.

(2) The Secretary shall require at least 50 percent of the costs directly and specifically related to any demonstration project under this Act to be provided from non-

Federal sources. The Secretary may reduce the non-Federal requirement under this paragraph if the Secretary determines that the reduction is necessary and appropriate considering the technological risks involved in the project and is necessary to serve the purposes and goals of this Act.

(3) In calculating the amount of the non-Federal commitment under paragraph (1) or (2), the Secretary shall include cash, personnel, services, equipment, and other resources.

(h) DUPLICATION OF PROGRAMS.—Nothing in this Act shall require the duplication of activities carried out under otherwise authorized programs of the Department.

SEC. 6. HIGHLY INNOVATIVE TECHNOLOGIES.

Of the amounts made available for carrying out section 5, up to 5 percent shall be used to support research on highly innovative energy technologies. Such amounts shall not be subject to the cost sharing requirements in section 5(g).

SEC. 7. TECHNOLOGY TRANSFER.

The Secretary shall foster the exchange of generic, nonproprietary information and technology developed pursuant to section 5, or other similar Federal programs, among industry, academia, and the Federal Government.

SEC. 8. REPORTS TO CONGRESS.

Within 18 months after the date of enactment of this Act, and annually thereafter, the Secretary shall transmit to the Congress a detailed report on the status and progress of the Department's hydrogen research, development, and demonstration programs. Such report shall include an analysis of the effectiveness of such programs, to be prepared and submitted by the Hydrogen Technical Advisory Panel established under section 108 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990. Such Panel shall also make recommendations for improvements to such programs if needed, including recommendations for additional legislation.

SEC. 9. COORDINATION AND CONSULTATION.

(a) COORDINATION WITH OTHER FEDERAL AGENCIES.—The Secretary shall coordinate all hydrogen research, development, and demonstration activities with other Federal agencies involved in similar research, development, and demonstration, including the Department of Defense and the National Aeronautics and Space Administration.

(b) CONSULTATION.—The Secretary shall consult with the Hydrogen Technical Advisory Panel established under section 108 of the Spark M. Matsunaga Hydrogen

Research, Development, and Demonstration Act of 1990 as necessary in carrying out this Act.

SEC. 10. REPEAL.

Sections 104 and 105 of the Spark M. Matsunaga Hydrogen Research, Development, and Demonstration Act of 1990 are repealed.

SEC. 11. AUTHORIZATION OF APPROPRIATIONS.

(a) GENERAL AUTHORIZATION.—There are authorized to be appropriated, to carry out the purposes of this Act, in addition to any amounts made available for such purposes under other Acts—

(1) $25,000,000 for fiscal year 1996;

(2) $35,000,000 for fiscal year 1997; and

(3) $40,000,000 for fiscal year 1998.

(b) USE OF APPROPRIATIONS.—Of the amounts appropriated under subsection (a) for each fiscal year—

(1) 30 percent shall be used for programs under section 5(b);

(2) 20 percent shall be used for programs under section 5(c);

(3) 30 percent shall be used for programs under section 5(d); and

(4) 20 percent shall be used for programs under section 5(e).

(c) RELATED AUTHORIZATIONS.—(1) For each of the fiscal years 1996, 1997, and 1998, the total amount which may be obligated for Energy Supply Research and Development Activities shall not exceed the total amount obligated for such activities in fiscal year 1995.

(2) Paragraph (1) of this subsection does not authorize the appropriation of any Federal funds.

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